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Response to 2nd Office Action dated 06/07/2006
Reply to Office Action of 03/07/2006

REMARKS

In the above-identified Office Action, the Examiner rejected Claims 1 – 4, 9 – 12, 17 – 20 and 25 - 28 under 35 U.S.C. §103(a) as being unpatentable over Monroe et al. in view of Fukui et al. Claims 5 – 8, 13 – 16, 21 – 24 and 29 - 32 were rejected under 35 U.S.C. §102(e) as being unpatentable over Oman.

The Examiner is thanked for the telephone interview of June 07, 2006. In that interview, Claim 1 and the references (i.e., Monroe et al. and Fukui) were discussed. No agreement was reached.

As mentioned in the SPECIFICATION as well as in the Response to the previous Office Action, dynamic addressing simplifies network administration because software keeps track of IP addresses rather than requiring an administrator to manage the task. This means that a new computer system can be added to a network without having to manually assign a unique IP address to the new system.

To assign IP addresses to client systems, a DHCP server uses a configuration file in which is stored a range of IP addresses for each sub-network. This configuration file is used to build a database that is consulted whenever a DHCP server has to assign an IP address to a client system. Associated with each range of IP addresses are options for at least a router and a domain name server. Thus, when the DHCP server assigns an IP address from a particular range of addresses to a client system, it also specifies which router and domain name server the client should use. Hence, depending on the number of active client systems in a sub-network, there may be times when a particular router and/or domain name server is overburdened with network traffic. When that occurs, the system administrator may want to load-balance the network by associating a new router and/or domain name server with a range of IP addresses. To do so, the system administrator has to modify the configuration file.

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As is well known in the industry, each time a configuration file is modified, the DHCP server has to be refreshed. Obviously, while the DHCP server is being refreshed, it cannot respond to any IP address requests. In addition, while client systems that have requested IP addresses after the DHCP server has been refreshed will use an unburdened router and/or domain name server, the ones that were assigned IP addresses before the DHCP server was refreshed will continue to use the overburdened router and/or domain name server. Therefore, a method for dynamically load-balancing routers and/or domain name servers in a network is greatly needed. The present invention provides such a method.

According to the teachings of the invention, dynamic host configuration protocol (DHCP) options stored in a configuration file on a computer system are periodically updated automatically. This periodic update ensures that routers and/or domain name servers used in a network will not be overburdened as the invention continuously load-balances them as opposed to the prior art method of waiting until a router and/or domain name server is overburdened before load balancing occurs.

The invention is set forth in claims of varying scopes of which Claims 1 and 5 are illustrative.

> 1. A method of *dynamically updating dynamic host configuration protocol (DHCP) options* stored on a computer system comprising the steps of:
>   *setting up the options into a configuration file;* and
>   *periodically updating the options automatically.* (Emphasis added.)
>
> 5. *A method of load-balancing network data traffic on network resources* comprising the steps of:
>   *setting up at least one option to use at least one of the network resources into a configuration file, the configuration file being stored on a computer system;* and

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> ***periodically updating the at least one option
> automatically to use another one of the resources.***
> (Emphasis added.)

As stated above, the Examiner rejected the Claims 1 – 4, 9 – 12, 17 – 20 and 25 – 28 under 35 U.S.C. §103(a) as being unpatentable over Monroe et al. in view of Fukui et al. Applicants respectfully disagree.

Monroe et al. teach a system and method for a graphical user interface with buddy dialogs. According to Monroe et al., a graphical user interface (GUI) may be constructed to list objects in some sort of list control, and a user may be allowed to select one for editing by, for example, clicking on an icon, tag or edit button. Upon selecting an object for viewing or editing, the user may be presented with a separate dialog with the appropriate type of fields for that particular type of object. One specific kind of dialog box is referred to as a pop-up dialog, and is often or typically used to provide a user a way to edit the data values of many individual objects with different value formats.

However, having a plurality of pop-up dialogs displayed on a screen for configuring objects in a GUI tend to clutter the screen. Further, one dialog box may hide valuable related information on the dialogs behind it etc. Particularly, configuring objects of global, subnet, class, and client objects in a Dynamic Host Configuration Protocol (DHCP) server may be quite problematic. There are up to 255 different option objects for each global, subnet, class, and client object and there are, for this example, at least ten different data formats used to represent the data values of the option objects. For example, when a user modifies the properties of a subnet, one of the property pages displayed contains a list of the options that are currently associated with the subnet. As the user selects an option from the list, the option data values need to be presented. The user should also have the capability to modify these values. Since there are potentially many options, popping up a dialog for each one is not a good solution.

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Thus, Monroe et al. propose the use of an Improved GUI which allows a user to quickly view current settings of a collection of objects using pop-up dialogs. Accordingly, Monroe et al. teach a GUI with a buddy dialog. As a user selects an object from a list of displayed objects, a corresponding buddy dialog including data values which may be manipulated by the user is added to the property page and dynamically becomes part of the current dialog.

Thus, Monroe et al. teach that a user has to select aDHCP object whenever a DHCP update or configuration is to occur (see col. 2, lines 42 – 46 and col. 3, lines 7 – 10). Therefore, Monroe et al. do not teach a method of *dynamically* updating DHCP options.

Further and as the Examiner correctly stated, Monroe et al. do not teach the step of *periodically* updating DHCP options *automatically*. To overcome this deficiency, the Examiner used Fukui for the proposition that it does teach this step. Hence, the Examiner continued, the combination of the two references does show the invention. Notwithstanding the fact that Monroe et al. do not teach a method of *dynamically* updating DHCP options, Applicants disagree.

Firstly, Fukui teaches an automatic configuration system for mapping node addresses within a bus structure to their physical location. Thus, Fukui does not teach *periodically* updating DHCP options *automatically*.

Secondly, the Examiner has impermissibly combined the teachings of Monroe et al. with those of Fukui.

As mentioned above, Monroe et al. teach manual selection of DHCP options when configuring DHCP. Fukui, by contrast, teaches an automatic configuration system for mapping node addresses within a bus structure to their physical location. Since Monroe teaches a specific method of configuring DHCP options, the Examiner may not use another reference (i.e., Fukui) to substitute the method taught by Monroe et al. Especially, when Fukui advocates automatic configuration while Monroe et al. call for manual configuration.

Applicants therefore submit that Claims 1 – 4, 9 – 12, 17 – 20 and 25 – 28 are allowable.

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Claims 5 – 8, 13 – 16, 21 – 24 and 29 – 32 were rejected under 35 U.S.C. §102(e) as being unpatentable over Oman. Again, Applicants have to respectfully disagree.

Oman purports to teach a system in a broadband network. According to Oman, the disclosure is directed to a control system and supervision of residential control in a broadband network through port control, class of service assurance, forced direction for network login, abuse and/or anti-spoof protection.

Thus, Oman does not teach, show or so much as suggest a *method of load-balancing network data traffic on network resources.*

Further, Oman does not teach the step of *setting up at least one option to use at least one of the network resources into a configuration file.*

The Examiner stated that Oman teaches this step in col. 3, lines 9 and 10 and in col. 3, lines 29 – 34. Applicants disagree.

In col. 3, lines 9 and 10, it is disclosed that "[a] DHCP is a protocol for auto-configuration of client network parameters."

As anyone skilled in the art well knows, DHCP is a protocol for assigning dynamic IP addresses to devices in a network. With dynamic IP addressing, a device can have a different IP address every time it connects to the network. Therefore, network parameters, as used by Oman, simply means IP addresses.

In col. 3, lines 29 – 34, it is stated that "[b]y feeding a DHCP server 30 with information from a VMPS server 28, each IP address can be tied to a FQPN in real-time and logged to a central server. The DHCP server 30 knows exactly how many addresses that have been assigned to each FQPN. Therefore it is able to deny any further attempts to lease additional addresses."

Thus, neither of the passages cited by the Examiner suggests the step of *setting up at least one option to use at least one of the network resources into a configuration file.*

Lastly, Oman does not teach, show or suggest the step of *periodically updating the at least one option automatically to use another one of the resources.*

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Once again, the Examiner stated that Oman teaches this step in col. 3, lines 40 – 43. And once again, Applicants have to disagree with the Examiner.

In col. 3, lines 40 – 43 it is stated that "[b]y adjusting BGP routing tables in the network 10 in real-time with respect to DHCP it is assured by the present invention that there is no feasible route to an address which has not been leased from the network 10."

Nowhere in that passage does it disclose *periodically updating the at least one option automatically to use another one of the resources.*

Thus, Oman does not anticipate Claims 5 – 8, 13 – 16, 21 – 24 and 29 – 32 in the Application. Consequently, Applicants once more request reconsideration, allowance and passage to issue of the pending claims.

Respectfully Submitted

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